

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed January 24, 2006. Claims 1-9 and 11-20 are pending in this application and are rejected in the Office Action. Claims 4, 12 and 17-19 are objected to. For at least the reasons discussed below, Applicant respectfully requests reconsideration and favorable action in this case.

Claim Objections

The Examiner rejects Claims 4, 12, and 17-19 because of certain informalities. Applicant has amended these claims to address the Examiner's objection. Therefore, reconsideration and favorable action are requested.

Section 112 Rejections

The Examiner rejects Claim 11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of which applicant regards as the invention. Claim 11 has been amended so as to depend from Claim 9, as suggested by the Examiner. Therefore, reconsideration and favorable action are requested.

Section 103 Rejections

The Examiner rejects Claims 1-5, 7, 17 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Willner et al. ("1.2 Gb/s Closely-Spaced FDMA-FSK Direct-Detection Star Network," IEEE Photonics Technology Letters. vol. 2, no. 3, March 1990, pp. 223-226) ("*Willner*") in view of U.S. Patent No. 6,088,144 issued to Doerr ("*Doerr*"). The Examiner also rejects Claims 6, 8, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over *Willner* in view *Doerr*, and in further view of U.S. Patent No. 5,483,368 issued to Ohshima ("*Ohshima*"). Applicant has canceled Claim 8 and has included the limitation of this canceled claim in both of independent Claims 1 and 17. Thus, the arguments below relating to Claims 1 and 17 will address the Examiner's rejection with respect to Claim 8.

Independent Claim 1, as amended, recites the following limitations:

A method for processing information in a receiver of a multichannel optical communication system, comprising:

receiving a wavelength division multiplexed (WDM) signal having a symbol rate and comprising a plurality of phase modulated optical information signals having a minimum channel spacing that is greater than $(N+0.4)B$ and less than $(N+0.6)B$, where B comprises the symbol rate of the WDM signal and N is an integer;

demultiplexing the phase modulated optical information signals from the WDM signal;

converting each of the phase modulated optical information signals to an intensity modulated optical information signal using an asymmetric interferometer; and

recovering a data signal from the intensity modulated optical information signal.

Independent Claim 17 recites similar, although not identical, limitations.

In order to establish a *prima facie* case of obviousness, three requirements must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge available to one skilled in the art, to modify a reference or combine multiple references; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or combination of references) must teach or suggest all of the claim limitations. M.P.E.P. § 2143. In the present case, a *prima facie* case of obviousness cannot be maintained at least because neither *Willner*, *Doerr* nor *Ohshima* provides a suggestion or motivation to combine the disclosure of the references in the manner in which the Examiner is combining them.

The M.P.E.P. sets forth a strict legal standard for finding obviousness based on a combination of references. According to the M.P.E.P., "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge [that was] generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. 2143.01. The "fact that references can be combined or modified does not render the resultant combination [or

modification] obvious unless the prior art also suggests the desirability of the combination” or modification. *Id.* (emphasis in original).

The governing Federal Circuit case law makes this strict legal standard even more clear.¹ According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation to combine . . . prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000)). “Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* In *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that proper evidence of a teaching, suggestion, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted).²

In the present case, Claim 1 has been amended to recite the limitation of Claim 8 that the received WDM signal comprises “a plurality of *phase* modulated optical information

¹ Note M.P.E.P. 2145(X)(C) (“The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.”).

² See also *In Re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992) (“Conspicuously missing from this record is any evidence, other than the PTO’s speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at” the claimed invention.).

signals.” With respect to Claim 8, the Examiner agrees that *Willner* does not disclose a phase modulated signal, but asserts that *Ohshima* does disclose such a signal. Although the cited passage of *Ohshima* states that signals may be transmitted by modulating the phase, this passage says nothing about the use of interferometers. Furthermore, Applicant respectfully disagrees with the Examiner’s argument that the use of a phase modulated signal is a simple “design choice” and that it is obvious that such a signal could be used in the system disclosed in *Willner*. Applicant believes that it would not have been obvious to use a phase modulated signal in *Willner* since that system is specifically designed for converting frequency modulated signals to amplitude modulated signals.

More specifically, Figure 2 of *Willner* shows a distorted frequency-shift-keyed (FSK) signal and how to center the passband of a Fabry-Perot interferometer to convert the FSK signal to an amplitude-shift-keyed (ASK) signal. As indicated on p. 223 (Introduction section) of *Willner*, the FSK signal is converted to an ASK signal by selecting either the “0” frequency tone or the “1” frequency tone (the two peaks shown in Figure 2) and rejecting the other tone. Therefore, *Willner* discloses how to center the Fabry-Perot interferometer over one of the peaks (the “1” tone) to optimize performance. As in shown, the filter is optimally centered at point “B” in the figure, but could also be centered at points “A” or “C.” In any case, the center frequency of the Fabry-Perot interferometer is different than the average frequency of the FSK signals (which is centered between the two peaks of the signal). On the other hand, with phase modulated signals, the average frequency of the modulated signal overlaps the center frequency of the interferometer. In this way, almost all of the power of the phase modulated signal passes through the interferometer.

Therefore, it would not have been obvious to modify the teachings of *Willner* to use a phase modulated signal in the system described therein instead of an FSK signal. The use of a phase modulated signal in that system would not make sense and thus that system cannot simply be modified by replacing the FSK signals with phase modulated signals as suggested by the Examiner. For at least this reason, Applicant respectfully requests reconsideration and allowance of Claim 1, as well at Claims 2-8 which depend from Claim 1. Furthermore, Claim 17 is allowable for similar reasons, and thus Applicant respectfully requests

reconsideration and allowance of Claim 17, as well at Claims 18-20 which depend from Claim 1.

The Examiner also rejects Claims 9, 11-13 and 15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,027,435 issued to Chraplyvy et al. ("*Chraplyvy*") in view of *Doerr and Willner*. In addition, the Examiner rejects Claims 14 and 16 under 35 U.S.C. § 103(a) as being unpatentable over *Chraplyvy* in view of *Doerr and Willner* and further in view of *Ohshima*.

For the same reasons discussed above with respect to Claims 1 and 17, Applicant respectfully submits that there is not a motivation to combine *Willner* and *Ohshima* in the manner suggested by the Examiner. Furthermore, like *Willner*, *Chraplyvy* also discloses the same process for converting an FSK signal to an ASK signal (see Col. 13, lines 3-30; Figure 7). Thus, there is also not a motivation provided to combine *Chraplyvy* and *Ohshima*.

For at least these reasons, Applicant respectfully requests reconsideration and allowance of Claim 9, as well at Claims 11-16 which depend from Claim 9.

CONCLUSION


Applicants have made an earnest attempt to place this case in condition for allowance. For at least the foregoing reasons, Applicants respectfully request full allowance of all the pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Brian W. Oaks, Attorney for Applicants, at the Examiner's convenience at (214) 953-6986.

Although Applicants believe no fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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